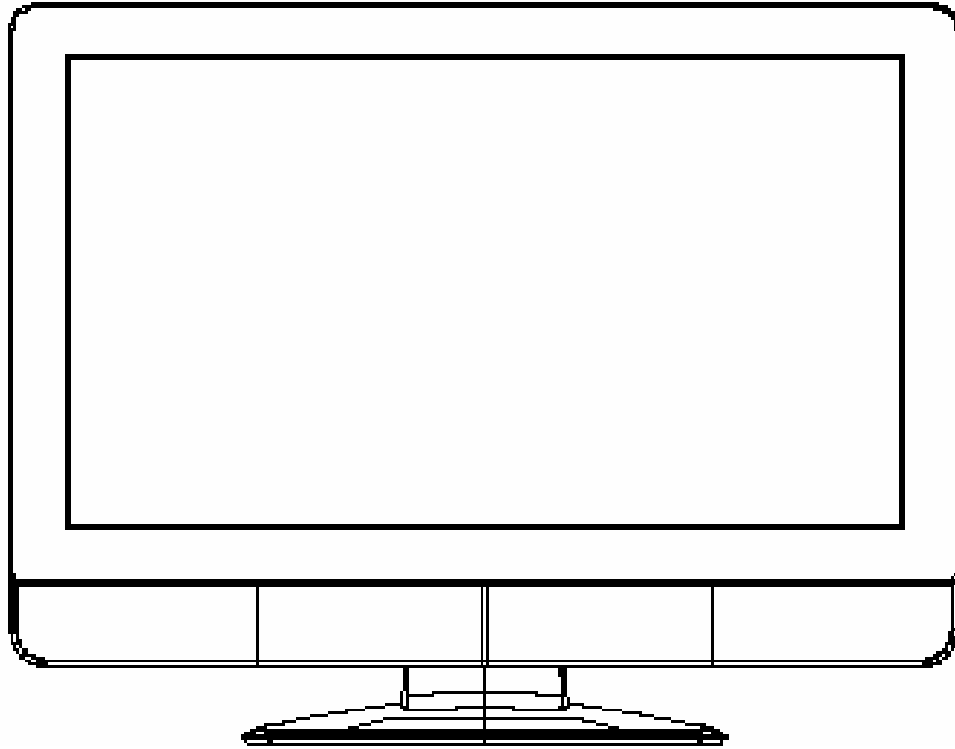


# Service Manual



**Model #: VIZIO VX37L HDTV**

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*Top Confidential*

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### *Appendix*

1. Main Board Circuit Diagram
  2. Main Board PCB Layout
  3. Assembly Explosion Drawing
- Block Diagram

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#### FCC INFORMATION

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

#### FCC WARNING

To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

#### CE CERTIFICATION

This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

#### SAFETY CAUTION

Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

# Chapter 1      Features

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1. Built in TV channel selector for TV viewing
2. Simultaneous display of PC and TV images
3. Connectable to PC's analog RGB port
4. Built in S-video, HDTV, composite video, HDMI and TV out
5. Built in auto adjust function for automatic adjustment of screen display
6. Smoothing function enables display of smooth texts and graphics even if image with resolution lower than 1366x768 is magnified
7. Picture In Picture (PIP) function to show TV or VCR images
8. Power saving to reduce consumption power to less than 3W
9. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, PIP, TV channel program, aspect and gamma or reset all setting.

# Chapter 2 Specification

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## 1. LCD CHARACTERISTICS

Type: LPL LC370WX1-SLA1

Size: 37.02inch

Display Size: 37.02 inches (940.3mm) diagonal

Outline Dimension: 877.0 mm (H) x 516.8 mm (V) x 55.5 mm (D) (Typ.)

Pixel Pitch: 0.200mm x 0.600mm x RGB

Pixel Format: 1366 horiz. By 768 vert. Pixels RGB strip arrangement

Contrast ratio: 1.CR : 1000(Typ) 2. CR WITH AI : 2000(Typ)

Luminance, White: 500 cd/m<sup>2</sup> (Typ)

Display Operating Mode: normally Black

Surface Treatment: Hard Coating (3H) ,Anti-glare treatment of the front polarizer.

## 2. OPTICAL CHARACTERISTICS

Viewing Angle (CR>10)

Left: 89°typ.

Right: 89°typ.

Top: 89°typ.

Bottom: 89°typ.

## 3. SIGNAL (Refer to the Timing Chart)

Sync Signal

1) Type: TMDS

2) Input Voltage Level: 90~240 Vac, 50/ 60 Hz

## 4. Input Connectors

RJ11, D-SUB15PIN (MINI, 3rows), Headphone, HDMIX2, RCAX3 (component), RCAX2 (AUDIO in), RCAX3 (composite), RCAX2 (AUDIO in), S-Video, Tuner.

## 5. POWER SUPPLY

Power Consumption: 280W MAX

Power OFF: to less than 3W MAX

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## **6.Speaker**

Output 10W (max) X2

## **7. ENVIRONMENT**

5-1. Operating Temperature: 5c~35c (Ambient)

5-2. Operating Humidity: Ta= 35 °C, 90%RH (Non-condensing)

5-3. Operating Altitude: 0 - 14,000 feet (4267.2m)(Non-Operating)

## **8. DIMENSIONS (Physical dimension)**

Width: 800 mm. +/- 20 mm

Depth: 1060 mm +/- 20 mm

Height: 360 mm +/- 20 mm

## **9. WEIGHT (Physical weight)**

a. Net: 19.1+/-0.5kgs

b. Gross: 24.6+/-0.5kgsn

### **9-1. MOUNTING PRECAUTIONS**

- (1) You must mount a module using holes arranged in four corners or four sides.
- (2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.
- (3) Please attach the surface transparent protective plate to the surface in order to protect the polarizer.  
Transparent protective plate should have sufficient strength in order to resist external force.
- (4) You should adopt radiation structure to satisfy the temperature specification.
- (5) Acetic acid type and chlorine type materials for the cover case are not desirable because the former generates corrosive gas of attacking the polarizer at high temperature and the latter causes circuit break by electro-chemical reaction.
- (6) Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.

Do not touch the surface of polarizer for bare hand or greasy cloth.(Some cosmetics are detrimental to the polarizer.)

- 
- (7) When the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with petroleum benzene. Normal-hexane is recommended for cleaning the adhesives used to attach front / rear polarizers. Do not use acetone, toluene and alcohol because they cause chemical damage to the polarizer.
  - (8) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
  - (9) Do not open the case because inside circuits do not have sufficient strength.

## **9-2. OPERATING PRECAUTIONS**

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage :  
 $V = \pm 200\text{mV}$  (Over and under shoot voltage)
- (2) Response time depends on the temperature. (In lower temperature, it becomes longer.)
- (3) Brightness depends on the temperature. (In lower temperature, it becomes lower.) And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
- (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
- (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (6) Module has high frequency circuits. System manufacturers shall do sufficient suppression to the electromagnetic interference. Grounding and shielding methods may be important to minimize the interference.

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### **9-3. HANDLING PRECAUTIONS FOR PROTECTION**

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.



## Chapter 3 On Screen Display

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### Main unit button

Power

MENU

CH ▲

CH ▼

VOL +

VOL -

Input

### TV Source

#### A. Picture Adjust :

- a. Picture Mode (Standard/Movie /Game / Custom)
- b. Backlight (0~100)
- c. Contrast (0~100)
- d. Brightness (0~100)
- e. Color (saturation)(0~100)
- f. Tint (hue) (0~100)
- g. Sharpness (0~7)
- h. Color Temperature (Cool/Normal/Warm/Custom)

#### B. Audio Adjust :

- a. Volume (0~100)
- b. Bass (0~100)
- c. Treble (0~100)
- d. Balance (0~100)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)

#### C. Special Features :

- a. Language (English/Français/Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Analog CC (OFF/CC1~4/TT1~4)
- d. Digital CC (OFF/CC1~4/Service1~6)
- e. Digital CC Style
- f. PIP Position (TL/TC/TR/ML/MR/BL/BC/BR)
- g. Rest All Setting

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D. TV Tuner Setup :

- a. Tuner Mode (Cable/Air)
- b. Auto Search
- c. Skip Channel

E. Parental Control :

- a. Parental Lock Enable (ON/OFF)
- b. TV Rating
- c. Move Rating
- d. Block Unrated TV (NO/Yes)
- e. Access Code Edit

**RGB Mode**

A. Picture Adjust :

- a. Auto Adjust
- b. Backlight (0~100)
- c. Contrast (0~100)
- d. Brightness (0~100)
- e. Color Temperature (9300/6300/Custom)
- f. Tint (0~100)
- g. H-Size (0~255)
- h. Horizontal Shift (0~63)
- i. Fine Tune (0~31)

B. Audio Adjust :

- a. Volume (0~100)
- b. Bass (0~100)
- c. Treble (0~100)
- d. Balance (0~100)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)

C. Special Features :

- a. Language (English/Français/Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. PIP Position (TL/TC/TR/ML/MR/BL/BC/BR)
- d. Rest All Setting

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## AV COMPONENT MODE

### A. Picture Adjust :

- a. Picture Mode (Standard/Movie /Game / Custom)
- b. Backlight (0~100)
- c. Contrast (0~100)
- d. Brightness (0~100)
- e. Color (saturation)(0~100)
- f. Tint (hue) (0~100)
- g. Sharpness (0~7)
- h. Color Temperature (Cool/Normal/Warm/Custom)

### B. Audio Adjust :

- a. Volume (0~100)
- b. Bass (0~100)
- c. Treble (0~100)
- d. Balance (0~100)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)

### C. Special Features :

- a. Language (English/Français/Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Analog CC (OFF/CC1~4/TT1~4)
- d. PIP Position (TL/TC/TR/ML/MR/BL/BC/BR)
- e. Rest All Setting

### D. Parental Control :

- a. Parental Lock Enable (ON/OFF)
- b. TV Rating
- c. Move Rating
- d. Block Unrated TV (NO/Yes)
- e. Access Code Edit

---

## HDMI MODE :

### A. Picture Adjust :

- a. Picture Mode (Standard/Movie /Game / Custom)
- b. Backlight (0~100)
- c. Contrast (0~100)
- d. Brightness (0~100)
- e. Color (saturation)(0~100)
- f. Tint (hue) (0~100)
- g. Sharpness (0~7)
- h. Color Temperature (Cool/Normal/Warm/Custom)

### B. Audio Adjust :

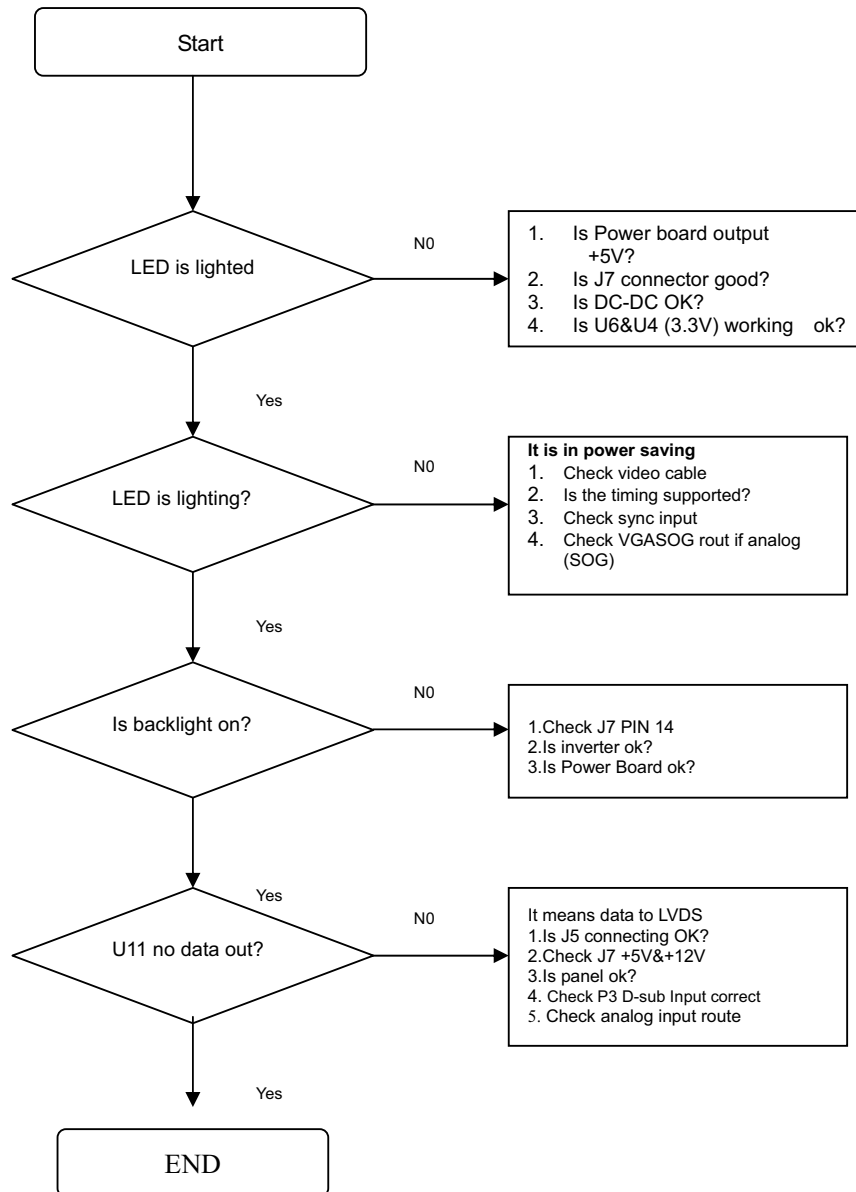
- a. Volume (0~100)
- b. Bass (0~100)
- c. Treble (0~100)
- d. Balance (0~100)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)

### C. Special Features :

- a. Language (English/Français/Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. PIP Position (TL/TC/TR/ML/MR/BL/BC/BR)
- d. Rest All Setting

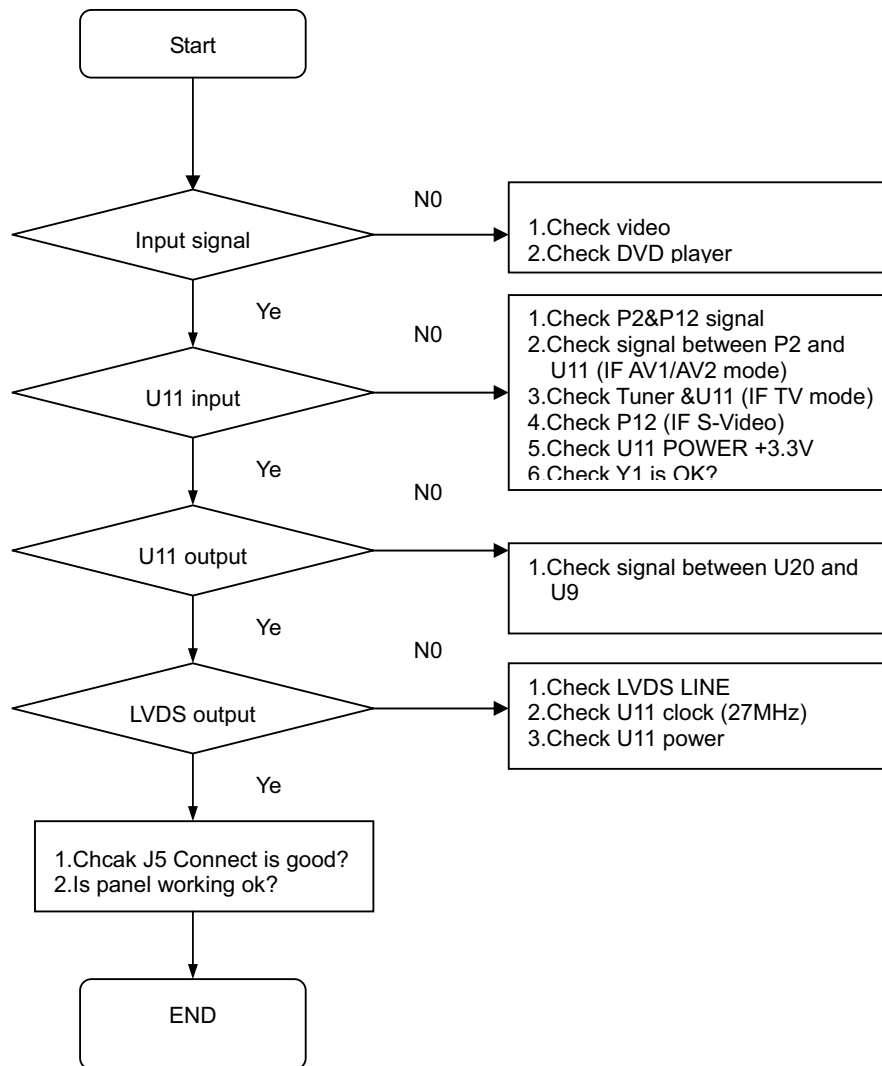
# Chapter 9    Trouble shooting

## MONITOR DISPLAY NOTHING (PC MODE)



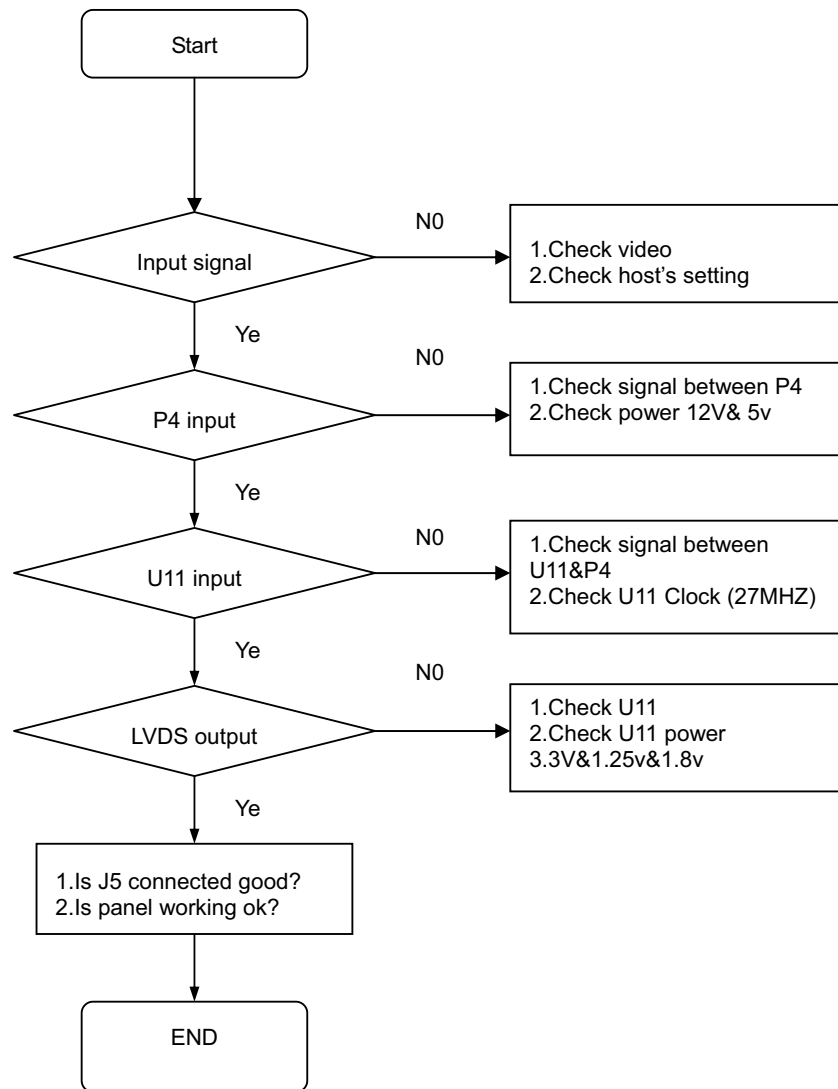
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(TV, COMPOSITE VIDEO1, 2, S-VIDEO) IS NOT DISPLAY CORRECTLY



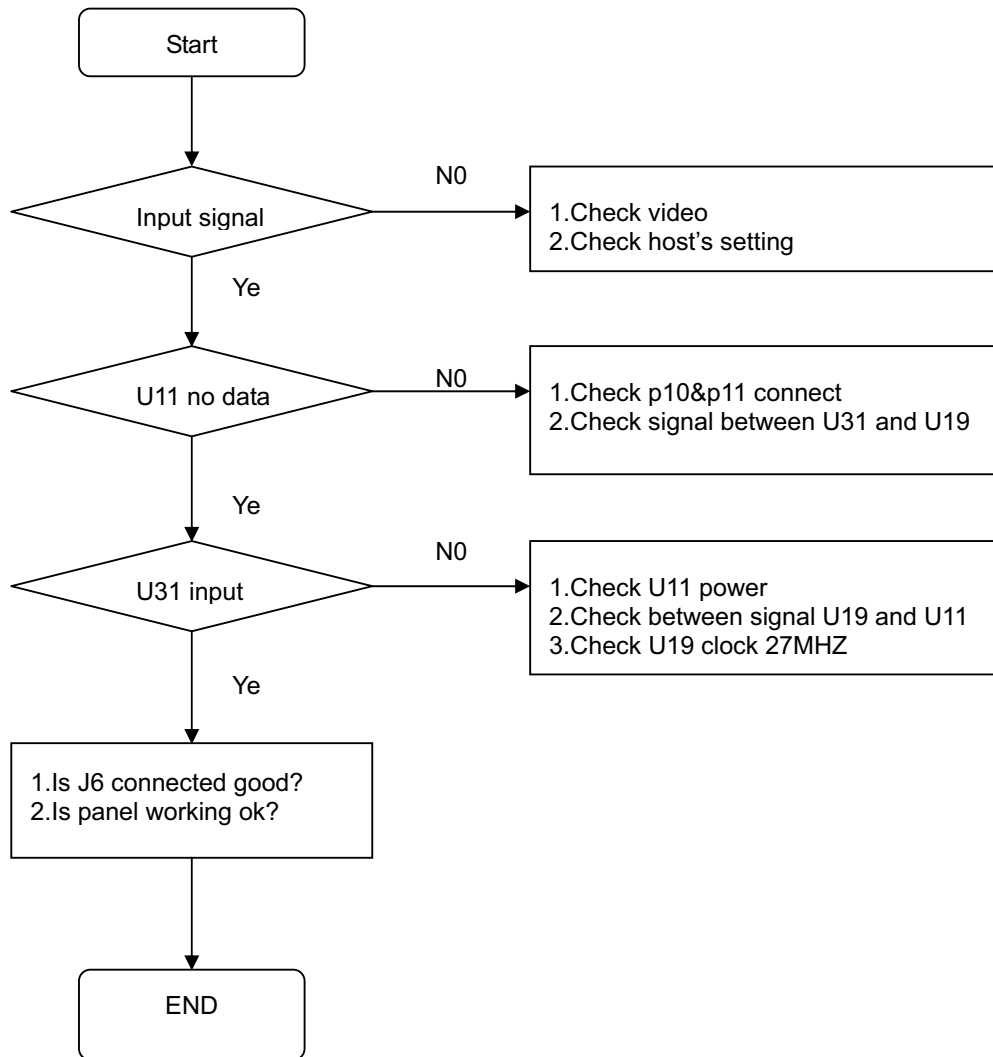
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(COMPONENT1, 2) IS NOT DISPLAY CORRECTLY



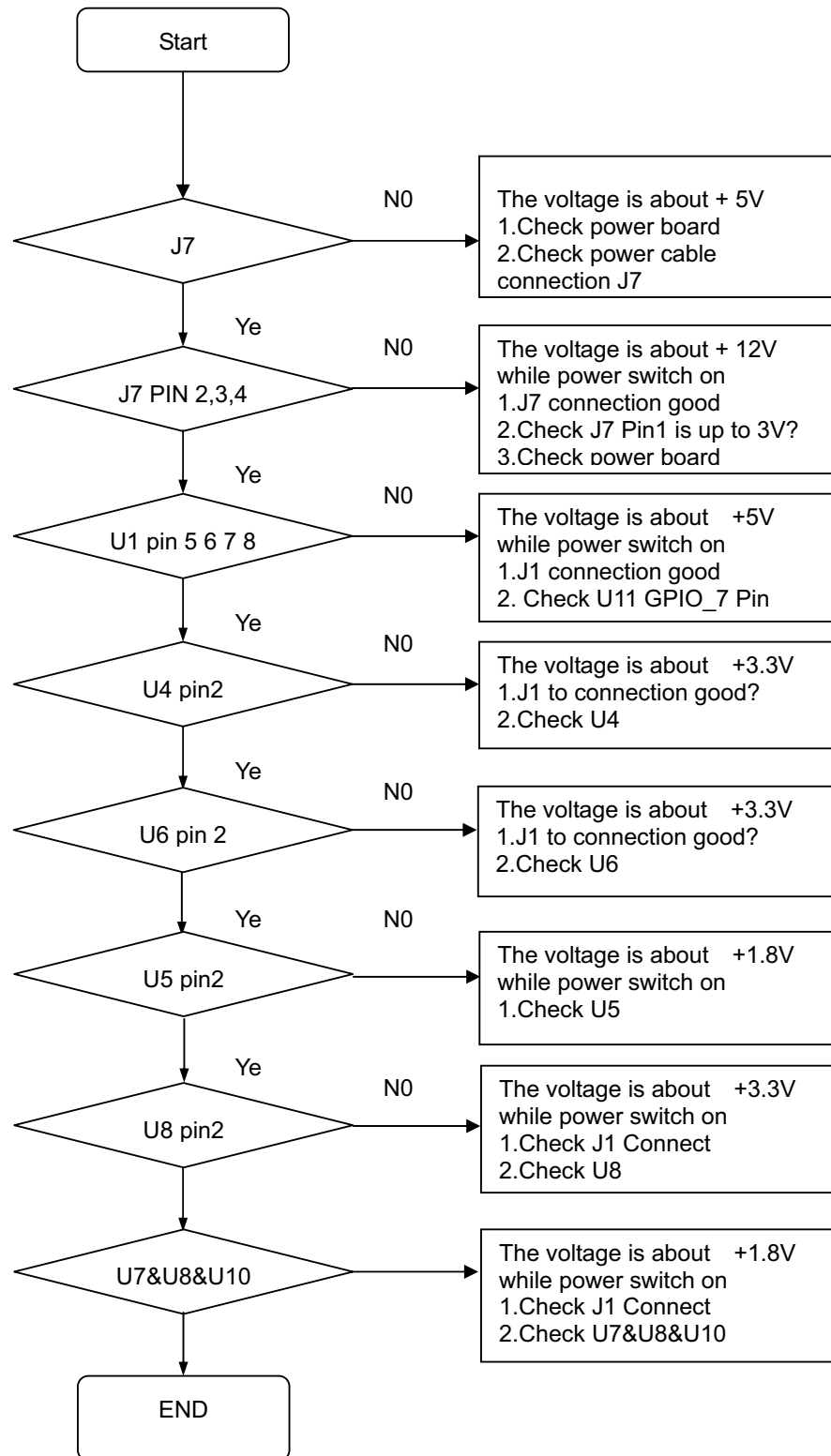
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(HDMI) IS NOT DISPLAY CORRECTLY





## TROUBLE OF DC-DC CONVERTER



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## TROUBLE OF DDC READING

